

What is claimed is:

1        1. An apparatus comprising:  
2              a mirror array to form a projected image comprising pixels; and  
3              a circuit to, for each pixel, control the mirror array to selectively combine reflected light  
4              from at least two mirrors of the array to regulate an intensity of the pixel.

1        2. The apparatus of claim 1, wherein, for each pixel, the circuit controls the mirror  
2              array to selectively tilt said at least two mirrors to reflect light into an optical path that intersects  
3              a location of the pixel to regulate the intensity of the pixel.

1        3. The apparatus of claim 2, wherein, for each pixel, the circuit controls the mirror  
2              array to cause a greater number of said of at least two mirrors to reflect light into the optical path  
3              for a higher intensity level than a number of said of at least two mirrors that reflect light into the  
4              optical path for a lower intensity level.

1        4. The apparatus of claim 1, wherein each pixel of the projected image is uniquely  
2              associated with at least two mirrors of the array.

1        5. The apparatus of claim 1, wherein each pixel of the projected image is associated  
2              with a number of mirrors of the array substantially equal to the number of potential gray levels of  
3              the pixel.

5        6. The apparatus of claim 1, wherein the circuit does not use pulse width modulation  
6              to regulate the intensity of each pixel.

1           7. The apparatus of claim 1, wherein a first dimension of the array is associated with  
2 pixel positions of the projected image and a different second dimension of the array is associated  
3 with intensity values for the pixels.

1           8. The apparatus of claim 1, further comprising:  
2           optics to, for each pixel, merge optical paths extending from said at least two mirrors into  
3 a single optical path that intersects a location of the pixel.

1           9. The apparatus of claim 8, wherein the optics compresses a two-dimensional image  
2 formed from light reflected from the mirror array into a one-dimensional sub-image of the  
3 projected image.

1           10. The apparatus of claim 1, wherein, for each pixel, the intensity of the pixel is  
2 indicated by a multiple bit digital value and mirrors of the array are organized into different  
3 groups, each group of mirrors being associated with a different bit of the digital value.

1           11. A method comprising:  
2           using a mirror array to form a projected image, the projected image comprising pixels;  
3 and  
4           controlling the mirror array to selectively combine reflected light from at least two  
5 mirrors of the array to regulate an intensity of each pixel.

1           12. The method of claim 11, further comprising:  
2           for each pixel, controlling the mirror array to selectively tilt said at least two mirrors to  
3 reflect light into an optical path that intersects a location of the pixel to regulate the intensity of  
4 the pixel.

1           13. The method of claim 12, wherein the controlling the mirror array to selectively tilt  
2 comprises:

3                 for each pixel, controlling the mirror array to cause a greater number of said of at  
4 least two mirrors to reflect light into the optical path for a higher intensity level than a number of  
5 said of at least two mirrors that reflect light into the optical path for a lower intensity level.

1           14. The method of claim 11, further comprising:

2                 uniquely associating each pixel of the projected image with at least two mirrors of the  
3 array.

1           15. The method of claim 11, further comprising:

2                 associating each pixel of the projected image with a number of mirrors of the array  
3 substantially equal to the number of potential gray levels of the pixel.

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5           16. The method of claim 11, wherein the controlling does not include using pulse  
6 width modulation to regulate the intensity of each pixel.

1           17. The method of claim 11, further comprising:

2                 using a first dimension of the array to identify pixel positions of the projected image; and  
3                 using a different second dimension of the array to identify intensity values for the pixels.

1           18. The method of claim 11, further comprising:

2                 merging optical paths extending from said at least two mirrors into a single optical path  
3 that intersects a location of the pixel.

1           19.     The method of claim 18, further comprising:

2                 compressing a two-dimensional image formed from light reflected from the mirror array

3     into a one-dimensional sub-image of the projected image.

1           20.     The method of claim 1, wherein, for each pixel, the intensity of the pixel is

2     indicated by a multiple bit digital value, the method further comprising:

3                 organizing mirrors of the array into different groups, each group of mirrors being

4     associated with a different bit of the digital value.

1           21.     A projection system comprising:

2                 condensing optics;

3                 a mirror array; and

4                 a circuit to, for each pixel, control the mirror array to selectively direct reflected light  
5     from the mirror array into the condensing optics from at least two mirrors of the array to regulate  
6     an intensity of the pixel.

1           22.     The projection system of claim 21, wherein, for each pixel, the circuit controls the

2     mirror array to selectively tilt said at least two mirrors to reflect light into an optical path that

3     intersects a location of the pixel to regulate the intensity of the pixel.

1           23.     The projection system of claim 22, wherein, for each pixel, the circuit controls the

2     mirror array to cause a greater number of said of at least two mirrors to reflect light into the

3     optical path for a higher intensity level than a number of said of at least two mirrors that reflect

4     light into the optical path for a lower intensity level.

1           24.     The projection system of claim 21, wherein each pixel of the projected image is

2     uniquely associated with at least two mirrors of the array.

1           25. The projection system of claim 21, wherein each pixel of the projected image is  
2 associated with a number of mirrors of the array substantially equal to the number of potential  
3 gray levels of the pixel.

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5           26. The projection system of claim 21, wherein the circuit does not use pulse width  
6 modulation to regulate the intensity of each pixel.

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2           27. The projection system of claim 21, wherein a first dimension of the array is  
3 associated with pixel positions of the projected image and a different second dimension of the  
array is associated with intensity values for the pixels.

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2           28. The projection system of claim 21, wherein, for each pixel, the intensity of the  
3 pixel is indicated by a multiple bit digital value and mirrors of the array are organized into  
different groups, each group of mirrors being associated with a different bit of the digital value.

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2           29. A projection system comprising:  
3           condensing optics;  
4           a mirror array;  
5           a processor coupled to the mirror array; and  
6           a flash memory storing instructions to cause the processor to, for each pixel, control the  
7 mirror array to selectively direct reflected light from the mirror array into the condensing optics  
from at least two mirrors of the array to regulate an intensity of the pixel.

1           30. An article comprising a computer-readable storage medium storing instructions to  
2 when executed cause a computer to:  
3           control a mirror array to produce a projected image, and  
4           for each pixel of the image control the mirror array to selectively direct reflected light  
5 from the mirror array in an optical path toward the projected image from at least two mirrors of  
6 the array to regulate an intensity of the pixel.

1           31. The article of claim 30, further comprising instructions to cause the processor to  
2 control the mirror array to direct the reflected light toward condensing optics.

1           32. The article of claim 30, further comprising instructions to cause the processor to  
2 group mirrors of the array into groups of multiple mirrors, each group being associated with a  
3 different pixel of the projected image and the mirrors of each group collectively forming a gray  
4 scale intensity for the associated pixel.